MATERIALS AND CONTEXTS FOR A CULTURE HISTORY OF THE COLUMBIA PLATEAU

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This chapter is an overview of the prehistoric occupation of the southern part of the Plateau cultural area (hereafter called the Columbia Plateau). It is important to remember that the Plateau in general and the Columbia Plateau in particular were defined as culture areas by anthropologists observing and working with relatively recent Native American inhabitants of the region (Driver and Massey 1957; Kroeber 1939; Murdock 1941). As such, the boundaries of culture areas were defined partially on the lifeways, economy, cultural traits, and language of inhabitants and partially on the geography and physiography of the region those people inhabited. Although the prehistoric picture of occupation in the Columbia Plateau is incomplete, it is apparent that artifacts, mode of habitation, subsistent practices, and human use of the land were dynamic and changed through time. It is also apparent that the environmental conditions of the regions shifted with regard to effective moisture, biotic communities, and even landforms (Daubenmire 1969; Wigand 1987). This necessarily means that the boundaries of the Columbia Plateau culture area may also have shifted over time as humans adapted to different social and environmental conditions. In fact, the Columbia Plateau culture area (defined by cultural traits) may have been drastically different 1,000 or 8,000 years ago than when it was originally defined by those anthropologists first working in the area. For this reason, the Columbia Plateau is defined for the purposes of this overview as primarily a geographic area, and the archaeological overview explores the human occupation of this geographic area even if such habitation does not conform to the Columbia Plateau culture area traits as originally defined by contemporary anthropologists.

However, the coarse-grained scope of this overview in both time and space provides a platform from which more questions are generated than answered. As such, this coarse-grained culture historical overview will be presented as a data set of prior knowledge about select aspects and areas of the Columbia Plateau. Prior knowledge helps guide researchers toward relevant questions and issues directly related to the data at hand. The topics to be discussed are quite broad, for without prior knowledge, our questions may or may not be relevant. This culture historical overview lends context to the issues, arguments, and concerns of many of the chapters to follow.

The Columbia Plateau includes those lands drained by the Lower and Middle Columbia River and its tributaries. Some of the more significant drainages of the Columbia River included within the Columbia Plateau geographic zone include the Snake, Clearwater, Salmon, Deschutes, John Day, Yakima, Grande Ronde, and Tucannon rivers. This is a relatively large area with a diverse environmental mosaic. As the prehistoric record of the Columbia Plateau is presented below, I refer sometimes to the entire region and at other times to specific drainages. I draw on information from specific drainages and particular sites to make interpretations about the entire Columbia Plateau. However, the specificity for which such interpretations can be made will vary from location to location based on the extent to which we can rely on the accuracy of our prior knowledge. Before reviewing the prehistoric occupation of the Columbia Plateau, it is necessary to discuss the contemporary and prehistoric environment.

ENVIRONMENTAL SETTING

The Columbia Plateau covers an area of about 500 km east to west, bounded on the east by the Bitterroot Range and on the west by the Cascade Range, and about 700 km north to south, bounded on the north by the Okanogan...
Highlands and on the south by the intermountain basin and range physiographic zone (see Figure 2.1). The Blue-Ochoco Mountains, which rise to 3,000 m above sea level are near the center of this 750,000 km² area. Almost completely incising the Blue-Ochoco Mountains are the deeply incised river canyons of the Snake and Columbia, with the elevation of some areas of the Columbia Plateau at less than 100 m above sea level. Tributaries of the Columbia and Snake rivers drain the Blue-Ochoco Mountains as well as the slopes of the Cascade Range to the west and the Bitterroot Range to the east. The Columbia Plateau also contains an extensive basin (Columbia Basin) as large as the Blue-Ochoco mountain range. Variability in elevation combined with the orographic effect of the Pacific Ocean air masses and the high Cascade mountain range produces a wide diversity of environmental conditions in the Columbia Plateau. Kimberling and Jackson (1983) provide additional details on the physiography of the region.

The lowland areas of the Columbia Plateau are primarily populated by shrub steppe and bunchgrass steppe habitat, while the higher elevations in the center of the region are populated by xeric montane forests (Daubenmire 1969; Franklyn and Dyrness 1973). However, parts of the Columbia Plateau, particularly in mountains surrounding the region, contain mesic montane forests, subalpine forests, alpine meadows, and woodland transition forests. This diversity of habitat supports a wide range of ungulates, including but not limited to elk (Cervus elaphus), mule deer (Odocoileus hemionus), and mountain sheep (Ovis canadensis) (Dalquest 1948; Hall 1981). In the recent past bison (Bison bison) were also found in the region (Van Vuren 1985). Resident fish of the Columbia Plateau include northern pike minnow (Ptychocheilus oregonensis), chiselmouth (Acrocheilus altus), mountain whitefish (Prosopium williamsoni), and bridgelp (Catostomus columbianus). Anadromous species of economic importance include Pacific lamprey (Entosphenus tridentatus), chinook salmon (Oncorhynchus tschawytscha), sockeye salmon (O. nerka), and steelhead trout (O. mykiss). Schalk (1977) provides a detailed overview on salmon habitat and migrations into the region. Important edible plants found in the Columbia Plateau include Indian ricegrass (Oryzopsis hymenoides), bitterroot (Lewisia rediviva), common camas (Camassia quamash), and many, many more root, seed, and berry species (see Daubenmire 1970; Hunn 1990; Leopofsky and Peacock, this volume; Statham 1975).

Latitude, elevation, and coastal moisture are among the most important characteristics that define the climate of Columbia Plateau today and in the past. Another of these characteristics is the high level of yearly and seasonal variability in effective moisture and prevailing winds. As such, the local environment in different areas of the Columbia Plateau is both dynamic and changing. Primary evidence used as a proxy for climatic change comes in the form of plant and animal identification at specific times (i.e., Gustafson 1972; Lyman and Livingston 1983; Schroedl 1973). These proxy data are gathered from archaeological sites, geological contexts such as pack rat middens and shell middens, and geological contexts such as bog and ice cores (Mehringer et al. 1977). Unfortunately, this evidence is often specific to isolated locations. It is now apparent that biotic evidence taken from different locations but in relatively close proximity to one another often suggests different climatic contexts (Blinman et al. 1979; Foit et al. 1992). The variability in climatic proxy data may be caused in part by true climatic differences over small or microenvironmental areas. Other factors such as the invasion of insects and natural and human-induced fires may also be responsible for localized changes in the biotic communities. These factors make it difficult to determine regionwide climatic regimes during the course of prehistory. Although localized and regional climatic reconstructions for the Columbia Plateau have been published (Table 2.1; see also Chatters 1998) it is important to note that each of these local reconstructions is unique.

CULTURE HISTORY

Introduction

The prehistoric culture history of the Columbia Plateau can be divided into four broad periods: Paleoarchaic (pre-11,000-8000 B.P.), Early Archaic (8000-5000 B.P.), Middle Archaic (5000-2000 B.P.), and Late Archaic (2000 B.P.–A.D. 1720). These dates are generalized for...
the entire Columbia Plateau, of course, and may differ slightly for any specific local area. They do, however, tend to follow culture historical trends across the entire Columbia Plateau. Table 2.2 cross-lists these four periods with various culture historical sequences from specific locations on the Columbia Plateau.

Early cultural chronologies on the Columbia Plateau were synthesized by Browman and Munsell (1969), Butler (1961, 1965), Cressman et al. (1960), Daugherty (1962), and Swanson (1962). Daugherty felt that the Columbia Plateau was part of a larger "Intermontane Western Tradition" that covered an area from British Columbia to Mexico and from the Cascades to the Rocky Mountains. He proposed that the area encompassed by the Columbia Plateau consisted of five periods that roughly correspond to environmental shifts proposed by Antevs (1955). Butler (1961) viewed the Columbia Plateau culture area as consisting of four traditions within what he called the "Old Cordilleran Culture," which emerged in different areas and had a distinctive identity throughout most of prehistory. These four traditions eventually overlapped in various regions of the Columbia Plateau. Swanson's synthesis is similar to Butler's Old Cordilleran Culture of hunting and gathering but more refined and specific for the Middle Columbia River. Browman and Munsell's culture history attempts to combine Daugherty's and Butler's ideas into a new sequence of seven periods. The Browman and Munsell synthesis added the notion of outside influences into the Columbia Plateau at different times in the prehistoric past, from both the Great Basin and the Canadian Plateau.

Since the 1960s there have been a number of new syntheses for specific regions of the Columbia Plateau. Several culture historical sequences have been suggested for the Lower Snake River (Ames et al. 1998; Leonhardt and Rice 1970; Reid 1991; Warren 1968). There have been numerous culture historical sequences for the lower section of the Middle Columbia River (Andrefsky et al. 1996; Galm et al. 1981; Greengo 1982; Nelson 1969; Swanson 1962) and the upper section of the Middle Columbia (Campbell 1985; Chatters 1984, 1986; Gough 1990). Cultural overviews for the Lower Columbia River and its tributaries (Deschutes and John Day rivers) can be found in Butler 1959, Cressman et al. 1960, Minor et al. 1987, and Toepel et al. 1980. Archaeological overviews of the northern Great Basin and Columbia Plateau boundary areas are available in Aikens 1993, Aikens and Jenkins 1994, and Connolly 1999. The culture history of the Blue Mountains, Hell's Canyon, and major tributaries above Hell's Canyon can also be found (see Andrefsky and Nauman 2003; Andrefsky et al. 1999; Burchard 1998; McPherson et al. 1981; Plew 2000; Schmeller 1999).

### Table 2.1: Columbia Plateau Environmental Generalizations.

<table>
<thead>
<tr>
<th>Date B.P.</th>
<th>Environmental Generalization</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>approximately 18,000</td>
<td>The last glacial maximum, bringing continental ice sheets into the northern border of contemporary Washington State</td>
<td>Kutzbach et al. 1993</td>
</tr>
<tr>
<td>approximately 15,000</td>
<td>Noticeable increase in solar radiation resulting in glacial retreats and warming oceans</td>
<td>Kutzbach et al. 1993</td>
</tr>
<tr>
<td>11,700</td>
<td>Mount Saint Helens (J) in western Washington erupted and spread tephra over much of the Columbia Plateau</td>
<td>Foit et al. 1992</td>
</tr>
<tr>
<td>11,200</td>
<td>Glacier Peak in northwestern Washington erupted and spread tephra over much of the Columbia Plateau</td>
<td>Foit et al. 1992</td>
</tr>
<tr>
<td>11,000–10,000</td>
<td>A pulse of colder weather caused an advance in ice sheets. This event has come to be known as the Younger Dryas</td>
<td>Mathewes 1993</td>
</tr>
<tr>
<td>9000–6000</td>
<td>The period (Altithermal) produced the greatest amount of summer insolation in the past 20,000 years, causing extreme seasonal climatic differences</td>
<td>Thompson 1984</td>
</tr>
<tr>
<td>approximately 6700</td>
<td>Mount Mazama (Crater Lake) in western Oregon erupted and spread tephra over much of the Columbia Plateau and Great Basin</td>
<td>Mehringer et al. 1977</td>
</tr>
<tr>
<td>approximately 6000</td>
<td>There is evidence for widespread cooling and increased moisture. Alpine glaciers begin to advance in the Cascades and northern Rocky Mountains</td>
<td>Ryder and Thompson 1986</td>
</tr>
<tr>
<td>approximately 4500</td>
<td>The Columbia Plateau became abruptly cooler and continued to get more moisture than today. Alpine glaciers advanced in all higher mountain ranges</td>
<td>Chatters 1998</td>
</tr>
<tr>
<td>2800–2500</td>
<td>Temperatures warmed, and vegetation communities approached modern distributions</td>
<td>Chatters 1998</td>
</tr>
<tr>
<td>approximately 700–600</td>
<td>Temperatures became much cooler, summers became shorter and wetter, sea ice spread southward, and alpine glaciers advanced. The “Little Ice Age” caused famine and halted northern latitude human colonization</td>
<td>Grove 1988</td>
</tr>
</tbody>
</table>

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The Paleoarchaic is a period of time that represents the earliest undisputed occupation of the Columbia Plateau. There are two recognized artifact "traditions" for this period of time, the fluted-point tradition and the western stemmed-point tradition. The fluted-point tradition is defined by lanceolate bifaces with collateral flaking and usually with an end flake or flute taken from the base. These points have often been called Clovis or Folsom and have been found as isolates and with associated assemblages in Washington, Oregon, and Idaho (Aikens 1978; Butler 1986; Carlson 1983; Fagan 1988; Willig 1988). The stemmed-point tradition includes lanceolate, stemmed, and shouldered bifaces. These bifaces are often found associated with crescents. Stemmed-point specimens have been called Haskett, Windust, Lind Coulee, Cascade, and Cougar Mountain, among others (Aikens 1993; Bryan 1980; Daugherty 1956; Davis 2001; Galm and Gough 2000; Leonhardy 1970; Rice 1963; Sanders 1982). Figure 2.2 illustrates examples of these artifact forms.

Many archaeologists in North America believe that fluted-point traditions represent the earliest occupation in the Western Hemisphere. However, recent studies disagree with this notion and have postulated a pre-fluted point occupation in some parts of North and South America (Bonnichsen et al. 1996; Dixon 1999; Overstreet 1993). Fluted-point assemblages from locations in and around the Columbia Plateau are not well dated. Jaguar Cave in Idaho produced a date of 11,580 ± 250 B.P. (Butler 1986). Connelly Cave from Oregon produced a date of 11,200 ± 200 B.P., and Cougar Mountain, also from Oregon, produced a date of 11,950 ± 350 B.P. (Bedwell and Cressman 1971). In each of these cases, however, there is no clear undisputable evidence that the dates were associated with fluted points. The East Wenatchee Clovis site in Washington contained fluted points and other artifacts found resting on top of Glacier Peak ash. This suggests to some (Mehringer and Foit 1990) that the fluted-point assemblage dates to just after the fall of Glacier Peak ash at approximately 11,200 years ago. Unfortunately, when bone from the same assemblage at East Wenatchee was dated, it produced an age of 5,215 ± 90 B.P. (Gramly 1996). Other important fluted-point tradition sites in the region include the Dietz site from Oregon (Fagan 1988; Willig 1988) and the Simon Cache from southern Idaho (Butler 1963; Butler and Fitzgerald 1965). Neither of these two sites had its fluted-point assemblage radiocarbon dated.

The Dietz site is notable because in addition to the fluted-point assemblage it also contains a stemmed-point assemblage (also not dated). Both assemblages are found on the dried pluvial lake margins of Greater Alkali Lake in multiple scatters. In general, the stemmed-point assemblages are found at higher elevations than the fluted-point assemblages (Willig 1988), but at times the "Clovis artifacts...overlap the occurrence of Western Pluvial Lakes Tradition artifacts in places" (Fagan 1988:390). It is not...
therefore clear if the western stemmed-point tradition is earlier than, later than, or coeval with the fluted-point tradition at the Dietz site. There are, however, multiple locations in and around the Columbia Plateau where the western stemmed points are dated after about 11,000 years ago. For instance, the western stemmed-point assemblage at Fishem Rapids is dated between 9,700 and 7,600 years ago (Cressman et al. 1960); that at Wildcat Canyon is dated between 10,600 and 7,300 years ago (Aikens et al. 1977; Hanes 1988); that at Connelly Cave is dated between 9,500 and 7,400 years ago (Bedwell 1970, 1973); that at Marmes Rockshelter is dated between 10,800 and 7,500 years ago (Sheppard et al. 1987); that at Hatwai is dated between 10,800 and 9,300 years ago (Ames et al. 1981); that at Sentinel Gap is dated between 10,600 and 10,100 years ago (Galm and Gough 2000); and that at Bison Rockshelter is dated to approximately 10,300 years ago (Swanson 1972).

It should be noted that the age of the fluted-point tradition in the Columbia Plateau is not well established, and it appears that there are several instances where western stemmed-point assemblages may be older than the oldest well-dated fluted-point assemblages from the Columbia Plateau and other places in North America. For instance, the Cooper's Ferry site located along the Lower Salmon River in Idaho contains several varieties of western stemmed points (e.g., Lind Coulee, Windust, Cascade) (Davis 2001). Two accelerator mass spectrometry dates, one on bone and the other on charcoal, produced dates of 12,020 ± 170 B.P. and 11,370 ± 70 B.P. (Wisner 1988). A freshwater mussel shell taken from the top of a cobble bed and associated with a western stemmed-point assemblage at Granite Point was dated to 14,100 ± 1160 B.P. This date was discarded as being "too early" (Leonhardy 1970). An average date of 12,830 ± 1050 B.P. was taken on a bison scapula from the Lind Coulee site. This date was discarded because of the minimal amount of collagen from the poorly preserved bone (Irwin and Moody 1978: 224). However, this specimen was recovered stratigraphically below Mt. St. Helens ash presumed to have been deposited approximately 11,700 years ago. Western stemmed points have also been found at the earliest occupation levels of Fort Rock Cave in Oregon. While a radiocarbon age of 13,200 B.P. was recovered in association with human artifacts, there is some confusion about the context partially because of the early age (Aikens and Jenkins 1994:7). These anomalous dates have led some researchers to argue that the western stemmed-point tradition predates the fluted-point tradition in the Columbia Plateau region (Bryan and Tuohy 1999).

The lack of fluted points in an unquestionable dated context in the Columbia Plateau coupled with the anomalous early dates for some western stemmed points suggests that the relationship between these two traditions is not fully understood at this time. Part of the problem might be clarified by a more detailed examination of the styles and chronology of the western stemmed points. Currently, various shapes and sizes of points are encompassed into this single tradition with limited consideration of the possibility that certain point styles may occur earlier than other styles. In fact, this appears to be the case at Cooper's Ferry, where the Lind Coulee points appear to be earlier than the Windust points, which are followed by Cascade points (Davis 2001). Leonhardy's (1970) work at the Granite Point site clearly shows Windust points occurring before Cascade points. New analysis of materials from the Lind Coulee site (Graven 2003) shows that Daugherty's original sequence of Haskett to Lind Coulee 1, 2, and 3 appears to follow a trend through time. The 10,000-year-plus dates from Sentinel Gap (site 43KT1362) do not include Windust or Lind Coulee points (Stang Gough, personal communication, 2003). Clearly, there is some additional work yet to be done on the culture historical sequence and technological styles related to the earliest human occupation of the Columbia Plateau.

The early human occupation of the Columbia Plateau does not appear to be restricted to a single environmental zone or to a single key subsistence resource. Both western stemmed-point tradition and fluted-point tradition sites are found in the southern Columbia Plateau along drying
The Early Archaic period is represented widely through scrapers, bone needles, and the same suggests that chipped-stone and bone technologies were approximately 8000 B.P. Artifact assemblages are identical for the early and late periods with the exception that large side-notched points are found after the fall of Mazama ash (see Figure 2.3). These points have been variously called “Northern Side-Notched” or “Cold Springs Side-Notched” points. It is not certain why or under what conditions the large side-notched points were added to the Early Archaic assemblage. This pattern is widely recognized by site excavations in areas outside of the Snake River canyon as well. The Stockhoff Basalt Quarry in the Blue Mountains of Oregon, for example, reveals the production sequences of the Cascade point before the Mazama ashfall and also reveals the production of Northern Side-Notched points after the ashfall (Womack 1977).

Early Archaic (8000-5000 B.P.)

The Early Archaic period is represented widely throughout the Columbia Plateau and as a result can be recognized by multiple phase names, stage names, and tradition names depending on the location within the Plateau. This period is roughly coeval with the early Holocene environmental period known as the Alithermal. This environmental period is hypothesized as a time of very widespread arid conditions (Antevs 1935). The Early Archaic of the Lower Snake River in Washington is known as the Cascade phase (Leonhardy and Rice 1970). Based on excavations from ten sites along the Snake, including but not limited to Thorn Thicket, Marmes Rockshelter, Windust Caves, Votaw, Granite Point, and the Tucannon site, Leonhardy and Rice (1970:23) see this phase beginning approximately 8000 B.P. and ending around 5500 B.P. Although others have slightly different beginning or ending dates for the Cascade phase, they cover roughly the same period of time (e.g., Ames et al. 1998; Andrefsky 1995; Bense 1972; Galm et al. 1981; Reid 1991).

The Early Archaic on the Lower Snake River (Cascade phase) is characterized by the occurrence of leaf-shaped bifaces or bipoinds (Cascade points), edge-ground cobbles, large cobble spalls, pounding stones, tabular end scrapers, bone needles, and Olivella beads. The complex cobble tool industry, with cobble spalls, edge-ground cobbles, and pounding or battering stones of various types, is especially noticeable. Some believe that such a technology may be related to salmon processing or bone grease extraction (e.g., Andrefsky in press; Bense 1972; Grater 1966; Muto 1976).

The period is separated into early and late subperiods that are partitioned at the time of the Mazama ashfall at approximately 6700 B.P. Artifact assemblages are identical for the early and late periods with the exception that large side-notched points are found after the fall of Mazama ash (see Figure 2.3). These points have been variously called “Northern Side-Notched” or “Cold Springs Side-Notched” points. It is not certain why or under what conditions the large side-notched points were added to the Early Archaic assemblage. This pattern is widely recognized by site excavations in areas outside of the Snake River canyon as well. The Stockhoff Basalt Quarry in the Blue Mountains of Oregon, for example, reveals the production sequences of the Cascade point before the Mazama ashfall and also reveals the production of Northern Side-Notched points after the ashfall (Womack 1977).

Early Archaic sites along the Middle Columbia River have been grouped into the Vantage phase by Nelson (1969). Nelson’s Vantage phase is based on his work at the Sunset Creek site (45KT28) and previous work done by Earl Swanson (1962) at Cedar Cave and Duck Cave. Artifact traits and the temporal span of the Vantage phase were modified by Galm et al. (1981) after more sites were examined. According to Galm and associates’ study (1981:60), the Vantage phase corresponds in time to the Cascade phase of the Lower Snake River, with early and late subperiods. The Vantage phase also contains the diagnostic leaf-shaped points, with the occurrence of large side-notched points after about 6700 B.P. Olivella beads, cobble tools, and microblades are also found during this period along the Middle Columbia River.

Robert Greengo’s (1982) work in the Middle Columbia River has produced a similar Early Archaic chronology based on the excavation of some 20 sites. Greengo’s Early “Prehistoric Period 1” and “Early Prehistoric Period 2” correspond to Leonhardy and Rice’s “Early Cascade Phase” and “Late Cascade Phase,” respectively. As such, they also correspond to Galm’s early and late Vantage phases. Excavations at Rye Grass Coulee and Sourdough Creek were significant in Greengo’s culture history for the Middle Columbia River (Munsell 1968). Several large archaeological projects were conducted farther upriver on the Middle Columbia in the 1980s—Chief Joseph (Campbell 1985) and the Wells Reservoir (Chatters 1986) projects. The Early Archaic period is known in this stretch of the Columbia River as the Kartar phase and the Okanogan phase. These phases are also characterized by leaf-shaped lanceolate points, cobble spall tools, edge-ground cobbles, and microblade technology. The Middle Columbia River assemblages differ slightly from Early
Archaic assemblages on the Lower Snake River primarily because of the inclusion of microblade technology.

The Columbia River and its tributaries below the confluence of the Snake River contain a number of important sites occupied during the Early Archaic period. Within the Columbia Gorge, excavations at the Indian Well Site, Wakemap Mound, and Fivemile Rapids were significant in defining this cultural historical phase (Butler 1959, 1965; Cressman et al. 1960). During the Early Archaic period sites in this end of the Columbia Gorge tended to have few stylistically diagnostic artifacts; however, there is evidence for fish and bird exploitation (Hansel 2003). Sites farther upstream such as Bob’s Point, Wildcat Canyon, Hat Creek, and Cold Springs contain artifact assemblages similar to those of the Middle Columbia and Lower Snake rivers. Here, again, there is evidence for the edge-ground cobbles, cobble spall tools, and large side-notched points near the end of the period (Cole 1968; Cole and Cressman 1961; Minor and Toepel 1986; Shiner 1961; Toepel et al. 1980). At Wildcat Canyon this period is known as the Canyon phase and included leaf-shaped points as well as large side-notched points after the fall of Mazama ash (Dumond and Minor 1983). On the southern reaches of the Columbia Plateau (Fort Rock Valley, Connley Caves) the Early Archaic period is represented primarily by Northern Side-Notched points and some Elko series points as diagnostic artifacts (Bedwell 1973; Oetting 1994). The leaf-shaped point does not appear to be temporally diagnostic for this edge of the Columbia Plateau. Lake margins and marsh environments were still being used during this period. Evidence of fish, bird, and small mammal consumption is also found in these locations (Dean 1994; Greenspan 1985, 1994).

Significant Early Archaic occupations in the Blue Mountains and Hell’s Canyon include the Stockhoff...
The Middle Archaic period on the Middle Columbia River is recognized as the very late Vantage phase and the Frenchman Springs phase (Galm et al. 1981), as well as the late Kartar and Hadnut phases (Jaehnig 1983). Pit-house sites on the Middle Columbia River often consist of one to three or four contemporaneously occupied structures. Site 45OK11 contained “three to four households, living in pit houses year round” (Lohse and Sammons-Lohse 1986:116). Other sites such as Cox’s Pond suggest a single pithouse occupation (Hartman 1975). Chatters (1995a) suggests that the early part of the Middle Archaic period on the Columbia Plateau was characterized by a relatively mobile residential pattern similar to that of the Early Archaic period (see also Rousseau, this volume). This relatively mobile existence, which utilized pithouses seasonally in some areas, was followed by an occupational hiatus (3900 B.P.). Then at approximately 3500 B.P. a more sedentary lifestyle was adopted. Chatters characterizes these two periods as “Pithouse I” and “Pithouse II,” respectively. One of the primary differences between Pithouse I and Pithouse II is the inclusion of storage features after 3500 B.P. According to Chatters, Pithouse I did not exist on the Lower Columbia River and it is not until 3000 B.P. that Pithouse II occupations are recognizable there.

Ames et al. (1998) argue that the Lower Columbia River cultural chronology for the Middle Archaic period is not well understood. Wildcat Canyon site and Hobo Cave appear to have a Middle Archaic component, but there is evidence of disturbance in the form of artifact mixing (Ames et al. 1998:110–111). Dumond and Minor (1983:157–162), moreover, suggest an occupational hiatus at the Wildcat Canyon site between approximately 5000 and 2000 B.P. The Fivemile Rapids area near The Dalles, Oregon, appears to have been abandoned during the Middle Archaic period, with human occupation before and after this period (Ames et al. 1998; Minor et al. 1987:40). However, sites just to the south of the Columbia River on the Deschutes River (Jenkins and Connolly 1996) and the John Day (Endzweig 1994b) show evidence of extensive habitation during this period of occupational hiatus along the Lower Columbia River. The proximity of these areas and the concordance of occupation and abandonment suggest a potential cultural relationship. More research must be completed among the sites and assemblages in these occupations to better understand these potential relationships.

The culture historical sequence in the Hell’s Canyon region of the Columbia Plateau for the Middle Archaic period appears to conform to the sequence on the Lower Snake and Middle Columbia rivers. The Middle Archaic in this region is referred to as Squaw Creek I phase and Squaw Creek II phase (Pavesic 1971). Squaw Creek I began at approximately 6500 B.P. and lasted until 3500 B.P. One of the most important and recognizable characteristics of this period is the first appearance of semisubterranean pithouses. On the Middle Columbia River the earliest pithouse was used at approximately 5200 B.P. (Lohse and Sammons-Lohse 1986). A date of 5050 B.P. was taken from house #6 at Hatwai Site on the Clearwater River (Ames and Marshall 1981). By about 4500 B.P. small pithouse villages were located extensively throughout the Columbia Plateau (Chatters 1995a). The Middle Archaic period on the Lower Snake River was originally characterized by Leonhardy and Rice (1970) as the Tucannon phase. They characterize the artifact assemblage containing sinkers (notched cobbles and pebbles), hopper mortars and pestles, cobble spall tools, a short contracting stemmed projectile point, and a short expanding stemmed projectile point. Again, there seems to have been a broad spectrum of small and large game included in the diet, as well as the use of salmon and freshwater mussels (Leonhardy and Rice 1970). Harder’s (1998) analysis of the Tucannan phase sites along the Lower Snake River reveals that hopper mortar bases, notched sinkers, corner-notched points, small side-notched points, and ground-stone smoking pipes were first introduced during the Middle Archaic period (see Figure 24). Important sites along the Lower Snake River at this time include the Marmes Rockshelter, Granite Point, Alpowai, Hatuhiphu, Three Springs Bar, Votow, and Tucannan Site (Brauner 1976; Brauner et al. 1990; Grater 1966; Harder 1998; Leonhardy 1970).
B.P. This was followed by Squaw Creek II, which lasted until 2500 B.P. (Warren et al. 1968). These phases were established primarily on the occurrence of various hafted biface forms. The early end of the Squaw Creek I phase intersects chronologically with the late Cascade phase of the Lower Snake River. Large side-notched bifaces are found for this time simultaneously in Hell's Canyon and along the Lower Snake River sites. The remainder of the chipped-stone assemblage of the Squaw Creek I and II phases is very similar to those of the Tucannan, Karrar, and Hudnut phases of the Lower Snake and Middle Columbia rivers.

Drawing on available evidence, and following the work of Binford (1980), I argue that the early end of the Middle Archaic period might be characterized as a forager economic strategy. Even though some pithouses were used at approximately 5000 B.P., they probably were occupied by people foraging for seasonally available food resources. Lohse and Sammons-Lohse (1986) note that occupants of site 45OK11 on the Middle Columbia River positioned themselves to exploit a wide range of subsistence resources (large and small game, fish, shellfish, root plants, etc.) from one central base. It is important to note that the exploitation of a single critical resource such as salmon or camas roots has not been established across the Columbia Plateau for the early end of the Middle Archaic period, despite sedentary and semisedentary occupations (but see Ames and Marshall 1981; Thoms 1989). Chatters (1995a) believes that it was only after 3500 B.P. that a collector economic strategy was adopted by Columbia Plateau groups. Evidence for intensive root crop exploitation seems to correspond to this age (Andrefsky 2000). Detailed excavations on the camas-processing and residential sites along the Pend d'Oreille River in northeastern Washington provide a clear history of camas root exploitation from Middle Archaic times through recent history (Andrefsky et al. 2000). Although camas acquisition and processing began as early as 5500 B.P., exploita-
tion seems to have been most intense between 3300 and 2500 B.P. (Andrefsky 2000:19.5). This intensive exploitation appears to coincide with increased salmon availability on the Columbia River system between 3300 and 2200 B.P. (Butler and Schalk 1986; Chatters et al. 1995). Studies imply that intensive critical resource exploitation did not occur until approximately 3500 B.P. on the Columbia Plateau. Clearly, more research is needed to clarify the timing of critical resource intensification in different regions of the Columbia Plateau.

**Late Archaic (2000 B.P.–A.D. 1720)**

To many, the Late Archaic period represents an archaeological extension of the settlement and subsistence practices of indigenous peoples observed by early researchers. The Late Archaic period terminates at A.D. 1720 because this is the date at which most Columbia Plateau archaeologists believe that the horse was initially introduced into the region (Presler 2000). There are many phase names associated with the Late Archaic period (Lower Snake River uses Harder and Piquinn phases, Middle Columbia uses Cayuse phase, Clearwater River uses Ahsahka phase, Hell's Canyon uses Big Bar I and II phases, Wildcat Canyon uses Wildcat phase, etc.). Regardless of the phase name used, the Late Archaic period is roughly similar in all areas of the Columbia Plateau. All areas of the Columbia Plateau show evidence by approximately 2000 B.P. of human occupation along all major and minor river valleys, in upland areas, and in dry basin areas. There is also evidence for the use of a great variety of nonlocal raw materials in artifact form not common in earlier periods. Obsidian artifacts traced to sources from southern Idaho and southern Oregon can be found in assemblages from central and northern Washington (Galm 1994). Marine shell from the coast of British Columbia and from the coast of California is also found in Columbia Plateau assemblages (Erickson 1983). The nature of the contact among different areas within and outside of the Columbia Plateau is in need of further exploration by researchers.

One of the most recognizable traits of a Late Archaic period occupation is the occurrence of pithouse villages. Pithouse villages with as few as a dozen pit features and as many as 100 or more are found on all the major river drainages of the Columbia Plateau in this period (Brauner 1975; Jenkins and Connolly 1994; Kenaston 1966; Reid 1991). Pithouse villages are also located on small tributary canyons away from the major rivers (DiScipio 1997; Reid and Gallison 1993), and they are found in higher upland areas (Endzweig 1994a; Gough 1990; Reid and Gallison 1992). Pithouse villages reveal a great amount of individual pithouse variability in size and depth. Some pit structures are as small as 4–5 m in diameter, and others are over 20 m in diameter (Green 1993). There is a strong possibility that the smaller pithouse features were used as nonresidential structures (sweat houses, storage pits, menstrual huts, etc.) and that the larger pit structures were used as habitation structures (Kennedy and Bouchard 1998; Smith 2000).

Some Columbia Plateau archaeologists believe that the ethnographic settlement pattern documented at the time of Euro-American contact actually began in the Late Archaic period 2,000 years earlier. This “ethnographic pattern” is characterized as large winter villages established in deep canyon bottoms where winter temperatures were relatively warmer; as spring arrived the large winter villages would begin partitioning into smaller groups to exploit seasonally available resources (Ray 1936). People in winter villages relied primarily on stored food materials that were supplemented with freshly killed game and fish catches. Although this ethnographic pattern is widely accepted by researchers, it is interesting to note that pithouse villages were not directly observed by the first Euro-American explorers into the Columbia Plateau. By the time Lewis and Clark had arrived into the region the indigenous Columbia Plateau peoples were living in rectangular mat-covered longhouses with no occupation of circular pithouse villages. It is not known for certain when pithouses were replaced by rectangular longhouses; nor are the conditions under which this transition occurred known. However, several studies have provided evidence that rectangular houses might be considerably older than originally suspected. Galm and Masten (1985), for example, have dated a rectangular longhouse found in the East Wenatchee, Washington, area to approximately 1,200 years ago. Evidence from site 45PO137 on the Pend d’Oreille River indicates that a large rectangular feature (perhaps a longhouse) was occupied at around 1,150 years ago and possibly as early as 1,700 years ago (Andrefsky et al. 2000). Nakonechny’s (1998) study of house structures at the Wexpusnime site on the Lower Snake River reveals that these structures were very shallow pits, sub-rectangular in shape, dating to between 1,000 and 1,200 years ago. Some archaeologists believe that deeply excavated circular pithouses were gradually replaced by shallowly excavated and surface rectangular longhouses during the course of the Late Archaic period (Ames et al. 1998).

Relative to earlier periods, the Late Archaic period showed significant population increases and higher population densities. There is a clear association with anadromous fish harvesting and processing (Campbell 1985; Schalk 1977). There is also evidence, associated with the intensification of fish harvesting, for storage technology in the form of pits and dry rock shelters (Draper and
Figure 2.5. Select Late Archaic artifacts. Items a–l: corner-notched and stemmed arrow points from 10H1017; m–v: notched arrow and dart points from North Fork of the Clearwater River (adapted from Draper 1991, 1993).
resources. These factors suggest that the adoption of the bow and arrow may be related as much to hostilities among humans as to more effective hunting methods.

CULTURE HISTORY AND RESEARCH CONTEXTS ON THE COLUMBIA PLATEAU

This brief culture historical overview of the Columbia Plateau raises important questions about the extent and content of regional prehistory. I argue that culture histories provide the foundation of prior knowledge that allows researchers to ask relevant questions about past human conditions. Coarse-grained culture histories (like the one presented above) are helpful for defining coarse-grained questions about a region. As culture histories become more fine-grained (scaled by space and time) they become more effective measures of prior knowledge and allow researchers to ask increasingly more relevant anthropological or behavioral questions about the data and patterning under investigation (see Goodale et al., this volume; Rousseau, this volume). This chapter concludes with a discussion of some of the important questions suggested in the culture historical overview presented above.

Archaeologists often assume that residential sedentism can be recognized in the archaeological record by the use of pithouse structures because pithouses are intellectually linked by researchers to increased residential sedentism and perhaps a more “collector-like” economic strategy. This assumption of course needs to be systematically tested and demonstrated. If this is true, however, then it is important that we develop a better understanding of the temporal and spatial ranges of Columbia Plateau sedentism. Culture history tells us that pithouse use was not uniform in time and space across the Columbia Plateau or the greater Plateau region (see Chatters, this volume; Kuijt and Prentiss, this volume). A tally of pithouse dates from the 350,000 km² Columbia Plateau may not provide a reliable understanding of prehistoric sedentism. Different locations on the Columbia Plateau may have adopted residentially sedentary practices at much different times. Without refined spatial segregation of such data, it would be difficult to understand the potential regional differences in Columbia Plateau sedentism. Could the same cultural group be moving from one location to another over the centuries? Could specific locations holding sedentary peoples have been abandoned for more productive locations as microenvironments changed because of natural and human perturbations (see Kuijt and Prentiss, this volume)? Such questions are generated from our more detailed understanding of Columbia Plateau culture history.

Columbia Plateau culture history reveals that residential sedentism was practiced at multiple locations on the Columbia Plateau simultaneously. For instance, sedentary villages appear to have been occupied on the Middle Columbia River and on the Clearwater and Deschutes rivers at the same time. We do not yet understand this relationship between the different spatially distinct areas; nor do we understand the conditions under which we might expect different groups to adapt to a sedentary lifestyle at approximately the same time. This leaves us with a number of important questions. For example, do these different sedentary villages represent different cultural groups? Could there have been contact among the various groups that might have led to similar adaptations? Can any or all of the sedentary groups be historically traced to a common geographic or cultural origin? These are important questions related to human culture change and continuity not only for the Columbia Plateau but for a much wider anthropological audience (see Prentiss and Kuijt, this volume). Prior knowledge helps us craft these questions for our regional studies.

The later end of the Late Archaic period on the Columbia Plateau shows clear evidence of population aggregation. Culture histories from all corners of the Columbia Plateau reveal multiple settings for these aggregated communities (islands, hidden side canyons, upland meadows, etc.) (see Chatters, this volume). Refined culture histories help us pose relevant questions about larger issues of human organization, cultural evolution, and social formations, and they direct us toward meaningful data sets in the archaeological record that may be useful for addressing specific questions (see Hayden and Cousins, this volume; Prentiss and Kuijt, this volume). To what extent was Columbia Plateau population aggregation related to coalition formation? How might this be related to the emergence of warfare, trade, and the centralization of power (see Chatters, this volume)? Along different lines, we might ask if prior knowledge about raw material sources and particular technologies helps define specific components of the archaeological record that might help support or refute competing hypotheses related to warfare, trade, and power (see Blake, this volume).

The intensification of food acquisition and processing has been an important archaeological issue on the Columbia Plateau for over 20 years. Most researchers attribute food intensification to greater population densities, or they attribute increased population densities to increased food intensification. In either case, we know that increases in human populations occur with a shift (even a slight shift) toward greater female-to-male survival ratios and potentially shifts in the economic roles of females and males. Female-to-male sex ratios in the majority of known hunter-gatherer populations worldwide tend to positively correlate with the economic contribution of females and males. When considering how labor was allocated in these communities, we should ask if our broad understanding of culture history illustrates a shift
in food-production effort from males to females on the Columbia Plateau (see Lepofsky and Peacock, this volume). If so, when and where did this occur? Does it correlate with increased population aggregation? From the standpoint of material correlates, what data sets can be used to assess food-production and -processing efforts in the archaeological record (see Goodale et al., this volume; Hayden and Adams, this volume)?

If nothing else, this overview of Columbia Plateau culture history illustrates that there is a whole series of significant anthropological and evolutionary questions that have yet to be fully addressed by researchers. In addition to the issues of sedentism, aggregation, coalition formation, and food-resource intensification, there are a number of important unresolved cultural-historical topics. For example, how should the phrase “Plateau ethnographic pattern” be used by researchers, and to what extent was it characteristic of the Columbia Plateau at different points of the past? How do we account for the aggregated Late Archaic pithouse villages found in upland areas away from major river canyons (so uncharacteristic of the “Plateau ethnographic pattern”)? How do we explain the replacement of pithouses and perhaps pithouse villages by rectangular lodge houses? How extensive was this “replacement” pattern, and what does this tell us about prehistoric settlement systems? Does it represent a new adaptive strategy adopted by extant Columbia Plateau groups, or does it mark the migration (or invasion) of a different cultural group into the Columbia Plateau?

Culture histories provide important material patterning over time and across space. Such patterning affords the contexts for which archaeologists begin to synthesize archaeological “facts.” It is important to remember that even though culture histories cannot often help answer questions about cultural evolution and human organization, these histories provide the contexts that allow us to pose relevant questions about complicated human conditions. Detailed culture histories yield pertinent questions and help archaeologists identify data useful for addressing our questions. It is both necessary and important that a book on the evolution of hunter-gatherer complexity, such as this one, devotes the first third of its contents to discussing preexisting social and economic systems and establishing how these regional patterns change through time.